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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/989,369  | 11/19/2001  | Gregory Alan Whitlow | 10541-273           | 1119             |
| 29074   | 7590        | 02/19/2004           | EXAMINER            |                  |
| BRINKS HOFFER GILSON & LIONE<br>P.O. BOX 10395<br>CHICAGO, IL 60611 |             |                      | FORD, JOHN K        |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 3753                |                  |

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/989369

Applicant(s)

Whitlow + Yu

Examiner

FORD

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12/15/03
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-4, 8-14, 16-18, 22-35 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 and 29-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4, 8-11, 16-18, 22-26, 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

Applicant's filing of an RCE, December 15, 2003, canceling claims 1, 5-7, 15 and 19-21, is acknowledged.

The elected species remains that of Figures 4 and 5 (third species) and claims 12-14 and 29-31 remain withdrawn at this time. Claims 2-4, 8-11, 16-18, 22-28 and 32-35 remain active here.

Applicant's response of November 17, 2003 (Paper No. 14) alleges that the rejection based on the O'Connor reference was so lacking in detail that it was "fundamentally unfair".

The Examiner notes that counsel never contacted the Examiner to discuss any of the rejections and be appeared to understand the reference well enough to intelligently amend claims 2 and 16 to avoid the rejections. There is no reason why counsel could not have contacted the Examiner to discuss his concerns and even now it is unclear to the Examiner what, if anything, counsel does not understand about the O'Connor reference. In the future the Examiner will not entertain responses that the rejections are unclear unless counsel has contacted the Examiner to discuss whatever it is that is purportedly "unclear" or "unfair".

Regarding the Examiner's quotation of the comments of the British Examiner as his own, it is respectfully submitted that the British Examiner's explanation is as clear an explanation as any that this Examiner would have written. While the laws change across the oceans, technical explanations do not, and the Examiner declines to further explain, redundantly, what is already abundantly clear in the record to one of ordinary skill in this art. This Examiner does not have the luxury of time and redundant explanations detract from the time available to conduct an examination. Again, if counsel is ever confused about the nature of a rejection, the Examiner has included his telephone number and is available to discuss counsel's concerns.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2 – 4, 8-11, 16-18, 22-28 and 32-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In independent claims 2 and 16, applicant now claims that the tube has a cross section that has a pair of sides (presumably the two major flat sides shown in Figures 4 and 5) "that extend a distance in an axial direction that is less than said length [of the

tube]". The Examiner has read the specification and examined all the drawing figures and sees no original disclosure to support this limitation. Similarly applicant claims that the nose end of the tube extends less than a distance that the pair of sides extend in the axial direction. The original disclosure is devoid of any such description of the invention. It is also not understood how the sides of the tube could extend less than the length of the tube since the sides of the tube, ultimately, are what defines the length of the tube. Applicant's November 17, 2003 response is silent on where support for these new limitations can be found in the original disclosure.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2 – 4, 8-11, 16-18, 25 – 28 and 32-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Awe et al. (USP 3,731,732)

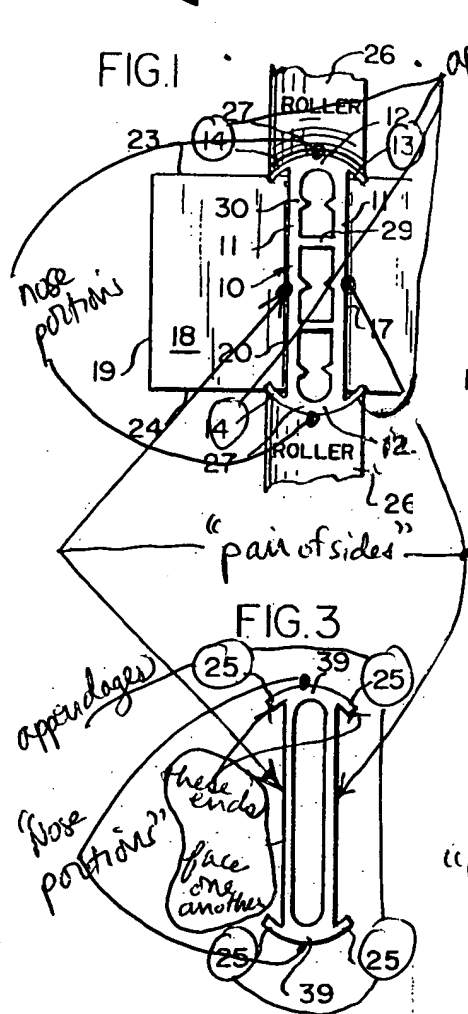
Figures 1 and 3 show a tube, which satisfies the claim limitations. Curved portions 13 in Figure 1 face each other, as do curved portions 14. Similarly in Figure 1, each of curved portions 13 and 14 at each edge 12 "face" each other when a horizontal line is drawn across the diagram of Figure 1 at the terminal edge. The claim can be read on the reference in at least two ways depending on whether sides 11 are

Art Unit: 3743

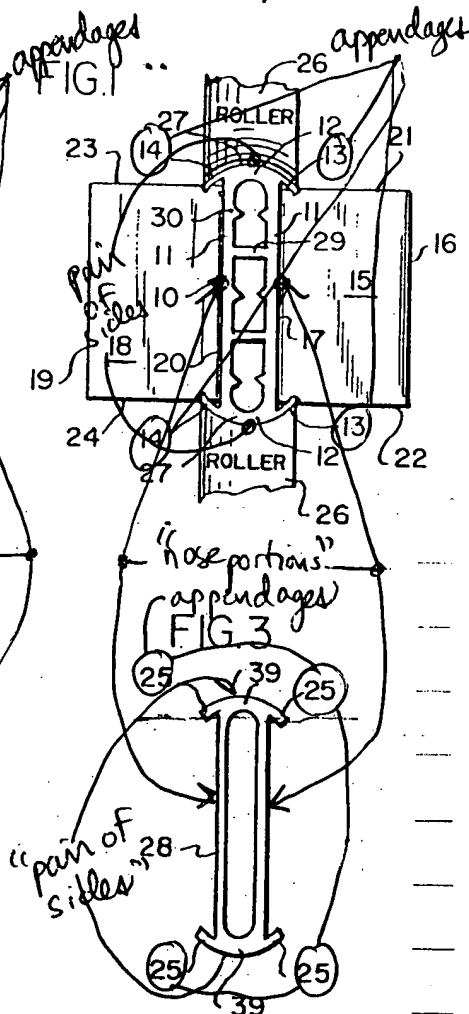
considered to be the claimed "ends" or whether edges 12 are considered to be the claimed "ends". The Examiner relies on both interpretations to maintain this rejection.

The two distinct interpretations are shown below using applicant's claim language:

Interpretation I



Interpretation II



If this still isn't clear enough to counsel, call the Examiner immediately. It is submitted that it couldn't be made any clearer unless the Examiner knew exactly what counsel doesn't understand.

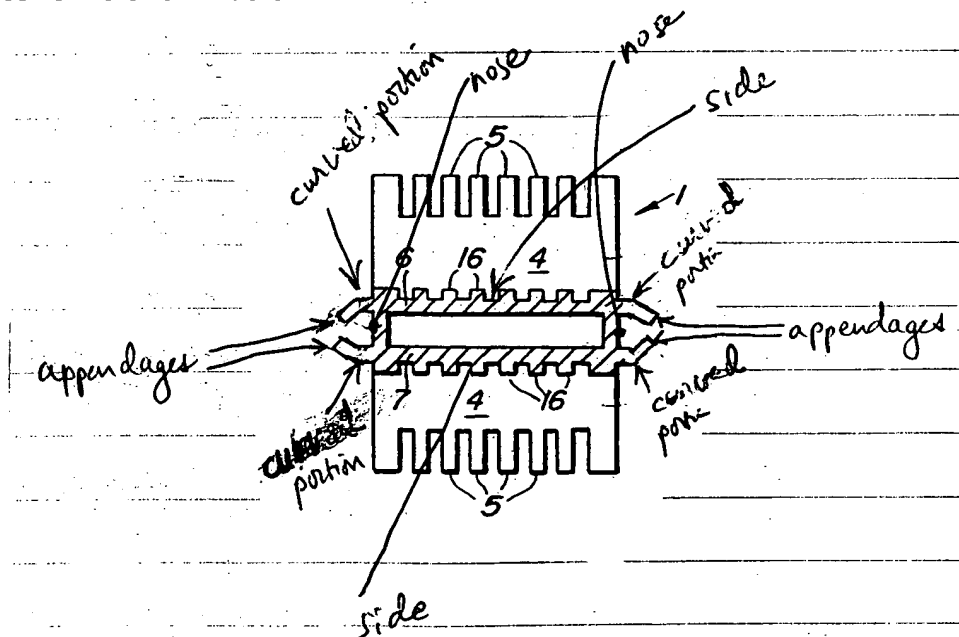
Art Unit: 3743

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 – 4, 8-11, 16-18, 25-28 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of O'Connor and Yoshii et al. (5,653,283).

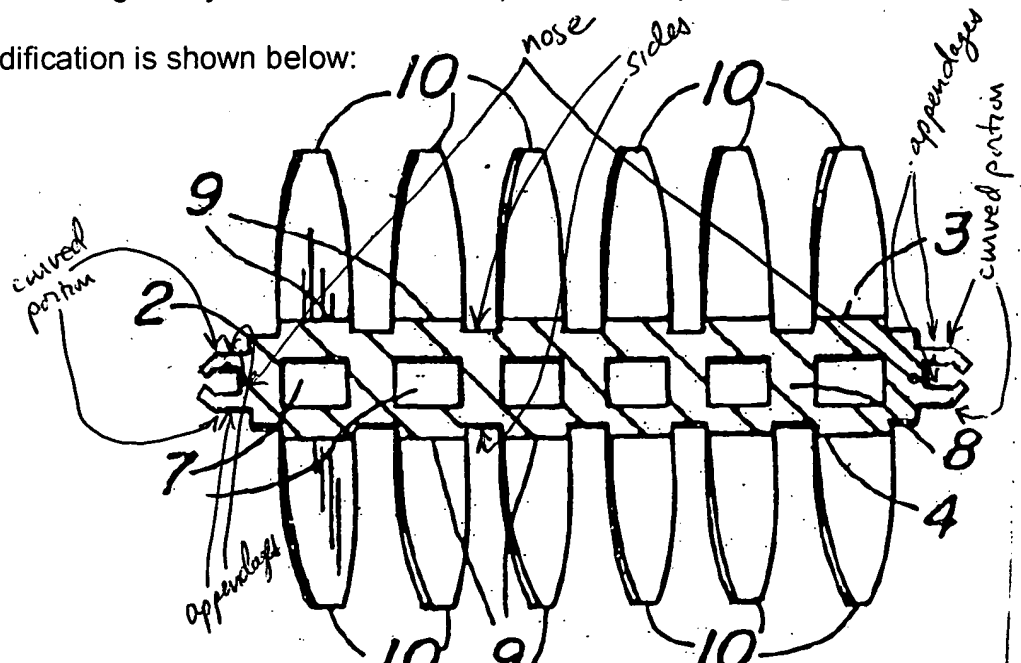
O'Connor shows straight "appendages" at each end of the tube which project outwardly parallel to major cross-section axis of the tube. To have curved each of these projections in O'Connor towards one another as taught by Yoshii Figure 1 at "4f" would have been obvious to improve air flow as discussed in col. 5, lines 5-10, by making the transition less abrupt than a blunt end would be. Such an improved curving of airflow would advantageously reduce the airside pressure drop through the heat exchanger. The modification is shown below:



Regarding claim 8, O'Connor shows appendages at each end of the tube (a total of four) and Yoshii explicitly teaches identical treatment of the inlet and outlet faces in col. 4, lines 32-34. Such treatment advantageously permits the heat exchanger to be installed in either orientation without airflow problems occurring due to an asymmetrical construction of the appendages.

Claims 2 – 4, 8 – 11, 16 – 18, 25 – 28 and 32 – 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of DT'069 and Yoshii et al. (5,653,283).

DT'069 shows straight "appendages" at each end of the tube which project outwardly parallel to major cross-sectional axis of the tube. To have curved each of these projections in DT'069 towards one another as taught by Yoshii Figure 1 at "4f" would have been obvious to improve air flow as discussed in col. 5, lines 5-10, by making the transition less abrupt than a blunt end would be. Such an improved curving of the airflow would advantageously reduce the air-side pressure drop through the heat exchanger. The modification is shown below:





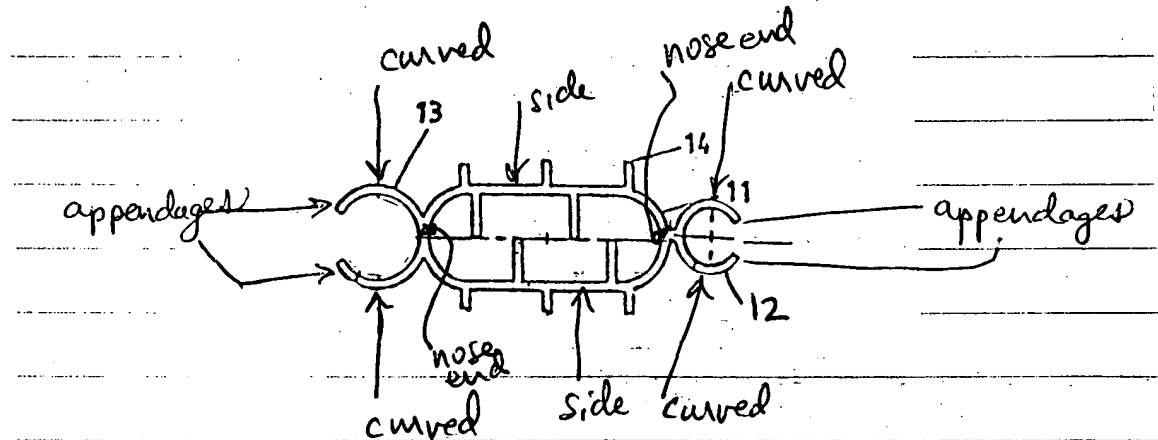
Regarding claim 8, DT'069 shows appendages at each end of the tube (a total of four) and Yoshii explicitly teaches identical treatment of the inlet and outlet faces in col. 4, lines 32-34. Such treatment advantageously permits the heat exchanger to be installed in either orientation without airflow problems occurring due to an asymmetrical construction of the appendages.

Claims 2 – 4, 8 – 11, 16-18, 25-28 and 32 – 35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 0179381.

See figs 3 – 4a and page 5 lines 5 – 21, noting flat or round tubes 1 having semicircular projections 12, 13 at the ends of the tubes. Whilst there is no disclosure of a condenser, it is considered obvious that as it is for heat transfer, the tubes could be used in a vehicle condenser, residential condenser or a radiator oil cooler.

Note in Figure 3 that there are elements 12 and 13 at each end of tube 11 (element 12 was omitted at the right hand of tube 11 in Figure 3a). The correct showing, in the Examiner's opinion, is shown below.

Art Unit: 3743



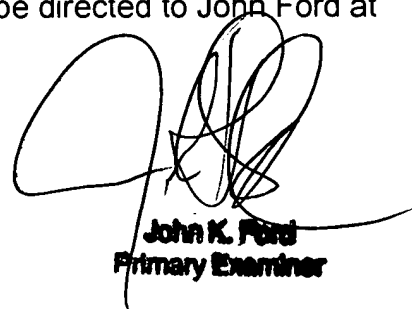
Contrary to applicant's remarks there is no disclosure that elements 12 and 13 are attached to each other. They are "fit" together, but they are not attached. Moreover the two appendages forming element 13 are only attached to one "nose" end of the tube and the two appendages forming element 12 are only attached to the opposite nose end of the tube.

Moreover, it would have been obvious to use the tube illustrated by the Examiner even on the boundary of the system shown in Figure 3, because to do otherwise would require extruding different shaped tubes for the peripheral edges of the heat exchanger versus those in the central region, a costly modification. Finally, to have used the same tube in a heat exchanger comprising only a single row of tubes would have been obvious for a heat transfer situation not requiring a multiple row of tubes (e.g. power dissipation). Single row heat exchangers are well known to those ordinary skill and official notice is taken of them. If counsel challenges the subject of official notice, see USPN 5,251,692, of record.

Claims 22-24 are rejected under 35 U.S.C. 103 (a) as being unpatentable over any of the prior art as applied to claim 16 above, and further in view of EP 0881448.

Each of the prior art references relied upon above, alone or in the explained combination, teaches the structure of the heat exchanger claimed but not necessarily the end use of that structure as a condenser in an automobile. EP'448 fairly teaches that heat exchangers such as the type shown by the prior art can be used as a refrigerant condenser in an automobile or a residence. See paragraph-spanning col. 14-15.

Any inquiry concerning this communication should be directed to John Ford at telephone number 703-308-2636.



**John K. Ford**  
**Primary Examiner**